travel information. Reluctance to enter into new public/private partnerships is often founded on uncertainty about governmental policies, particularly those related to commercialization of traffic information and services, willingness to grant sufficient franchise rights to balance market risk, and long-term commitment.

- *Potential Loss of Privacy* - To the extent ITS services identify a specific traveler or vehicle, substantial privacy concerns are raised which could ultimately affect public acceptance of ITS. Because ITS is still in the initial stages of deployment, the ITS community can formulate and apply principles and safeguards to address privacy. Extensive consideration must be given to the circumstances under which travelers or vehicles need to be identified, how identifying information will be stored and used, who will have access to the information, and which secondary uses of the information will be permitted.

Longer-Term Institutional Challenges

- *Implications of ITS Deployment for Society*- ITS will provide many benefits for society, but attention must also be given to the effect ITS will have upon land use and communities. Care must be taken to ensure that the benefits and costs of ITS are fairly distributed. ITS services must not be available only to those who can afford high-end consumer products but must be accessible across a broad range of social, economic, and geographic groupings.

- *Concern for the Environment*- As ITS deployment matures, environmental issues must be addressed on a comprehensive basis. For example, it will be necessary to clarify appropriate processes for environmental review under the National Environmental Protection Act and the Clean Air Act Amendments. Also to refine assessments of ITS environmental impacts and promote involvement of the environmental community in project level ITS deployment decisions.

- *Improving Procurement of ITS* - Procurement issues will require substantial attention as deployment progresses and could require some degree of federal, state, or local legislative change. ITS procurements involve new, complex technologies, new partners, and multiple levels of legal requirements. There are an unusually large number and variety of public agencies involved in ITS procurements. Some specific procurement issues encountered in ITS deployment include requirements pertaining to competitive bidding, organizational conflicts of interest, bonding, treatment of intellectual property, and cost accounting and audit, as well as project uncertainties resulting from the procurement process.

- *Managing Liability Risks* - Private ITS developers have expressed the view that while motor vehicle drivers presently bear the burden of the cost of automobile accidents, ITS user services which begin to exercise more vehicle control may shift liability to developers and operators of these services. The perceived vulnerability to lawsuits has resulted in calls for techniques to manage liability risk in certain ITS deployments.

While the US DOT, ITS America, academic institutions, and many other members of the ITS community have made significant progress in identifying and researching nontechnical barriers to ITS development and operational testing, much remains to be done. Nontechnical considerations may eventually present more demanding challenges to sustained and widespread expansion of ITS user services. The very nature of ITS deployment presumes fundamental changes in the institutional aspects of how transportation business has been conducted for many years.

V. WORKING TOWARDS ITS DEPLOYMENT

There is a clear national interest in realizing the benefits of enhanced transportation management, traveler services, safety, productivity, and in establishing the U.S. ITS market early so as to gain a competitive global advantage for the domestic ITS industry. The NPP establishes a vision of what can be accomplished in ITS deployment for the near future and explores the implications of different public and private deployment roles. The following section summarizes the NPP recommendations for roles and activities for the private sector, state and local governments, the US DOT, and ITS America in support of the continuing deployment of ITS.

State and Local Government

The role of state and local governments is to determine the needs of their communities and to organize funding, develop, and execute those projects which address their transportation needs. In that sense, state and local governments will likely initiate ITS infrastructure related projects, which may also involve private sector and the federal government participation. It is essential that state/local governments become aware of how ITS can be used to address their transportation needs, and then make short and long-range plans for the deployment of ITS. State and local governments should be encouraged to work closely with the US DOT, the private sector, and ITS America to coordinate deployments and achieve national compatibility.

The Private Sector

The primary role of the private sector is to develop and commercialize ITS products and services for consumers, industry, and the public sector. To fulfill this role, the private sector will invest and engage in a variety of activities, including research and development, market studies, product testing, and system evaluations. The private sector actions will be based on feasibility, marketability, and levels of acceptable risk. The private sector may take risks in deploying ITS products in advance of a well established market.

Public sector confidence and commitment to deploying the basic infrastructure to support in-vehicle, traveler, and other end-user information products is vital in encouraging early private sector investment. The public sector role must be vigorous enough to stimulate private sector participation, but not so aggressive as to preempt private sector involvement. Close cooperation between the private and public sectors is indispensable for achieving this balance.

The US DOT

The role of the US DOT is to facilitate the deployment of ITS information and communications infrastructure and stimulate private sector involvement and investment. The US DOT may, for example, facilitate the development of the communications and information infrastructure needed to deliver many ITS services by facilitating public and private institutional relationships; or supporting the development and coordination of travel and transportation management data bases; and by helping to fund the design, development, and deployment of ITS. The US DOT should continue to invest in long-term research, such as automated highway systems.

The US DOTshould employ incentives rather than regulatory mandates to achieve their objectives. The role of the private sector as partners and as infrastructure providers should be further developed. Where appropriate, federal funds should be used to enhance the development and deployment of ITS infrastructure. The use of private funds should be cultivated, or perhaps required, as part of the Federal-aid matching funds.

ITS America Role

The ITS community recognizes that ITS will be most effectively developed and deployed through a partnership of the public, private and academic sectors. ITS America is the embodiment of this partnership. It has a vital role in establishing cooperative working relationships and in promoting a national ITS program.

ITS America brings new interests and constituencies into the ITS deployment process, expanding ITS involvement through technical committees and state chapters, disseminating information, and building international relationships. ITS America plays a major role in guiding and building consensus for the national ITS architecture and for coordinating the development of standards and protocols. It plays an important role in building support for and awareness of ITS through its outreach program. ITS America's involvement in consensus building has focused attention on technical and non-technical issues and in the promotion of intermodalism. ITS America is the vehicle through which the members of the ITS community can exchange ideas and concerns.

The recommendations and issues in the NPP are presented for consideration and further discussion by the ITS community. Strategies for deployment and effective involvement of the participants must be implemented. A consensus on how ITS deployment should proceed will speed the realization of the benefits offered by ITS to travelers and transportation users.

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A substantial number of individuals contributed this document. The members of the ITS America Planning Committee, participating US DOT officials, and the Joint Writing team are listed with their affiliations below. The names and organizations of over 200 individuals who reviewed and commented on one or more drafts of the Plan are listed in Appendix A.

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Attachment A

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